

Commonwealth of Kentucky
Division for Air Quality

PERMIT APPLICATION SUMMARY FORM

Completed by: Linda Martin

GENERAL INFORMATION:

Name:	J.L. French Corporation
Address:	20 Prestwick Drive Glasgow, KY 42141
Date application received:	6/20/2005
SIC Code/SIC description:	3363, Aluminum Die-castings
Source ID:	21-009-00065
Source A.I. #:	78
Activity ID:	APE20050002
Permit:	V-08-026

APPLICATION TYPE/PERMIT ACTIVITY:

<input type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
__Administrative	<input checked="" type="checkbox"/> Title V
__Minor	<input type="checkbox"/> Synthetic minor
__Significant	<input type="checkbox"/> Operating
<input checked="" type="checkbox"/> Permit renewal	<input checked="" type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input checked="" type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input type="checkbox"/> NSPS	<input checked="" type="checkbox"/> SIP
<input type="checkbox"/> PSD	<input checked="" type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input type="checkbox"/> Not major modification per 401 KAR 51:001, 1(116)(b)	

MISCELLANEOUS:

- ☐ Acid rain source
- ☐ Source subject to 112(r)
- ☐ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☒ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☒ Certified by responsible official
- ☒ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Potential (tpy)	Actual (tpy) ¹	Allowable ²
PM ₁₀	53.95	11.4	Note 2
PM	61.5	13.4	Note 2
SO ₂	1.3	0.1	NA
NO _x	43.1	18.4	NA
CO	25.7	4.5	NA
VOC	62.6	9.8	NA
Single HAPs > 10 tpy	HCL 41.7	3.1	Note 2
Source wide HAPs > 25 tpy	NA	NA	NA

¹ Actual emissions are from the Kentucky Division for Air Quality's 2007 Emissions Inventory report.

² See **EMISSIONS AND OPERATING CAPS DESCRIPTIONS** below.

SOURCE DESCRIPTION:

J.L. French Corporation, formerly Nelson Metal Products Corporation, is a secondary aluminum processing source in Glasgow, Kentucky that produces die castings. The plant consists of a secondary aluminum production operation and a die casting operation. Scrap aluminum is processed into die castings for parts for internal combustion engines. The Standard Industrial Classification (SIC) code for this aluminum die casting source is 3363.

Scrap aluminum, sows, ingot and alloying materials are the raw feed material that is charged to the furnaces at this plant. Secondary aluminum production operations utilize either induction furnaces, which use only clean charge; or reverberatory furnaces which may or may not use clean charge.

Scrap aluminum may be fed into the aluminum scrap shredder to be reduced to a smaller size before processing by the rotary drum preheater or the melt furnaces. The particulate emissions from the uncontrolled shredder are released as fugitive emissions. As an alternative operation oily and oil-free scrap chips that are unpainted/uncoated may be processed in the natural gas-fired rotary drum preheater. The preheater, which was considered as a thermal chip dryer in initial TV Permit V-00-038, operates solely in a low-temperature mode of 350°F or less to remove water from the scrap. Since this temperature is below the boiling point of applied machining coolants and die lubricants, the unit qualifies as a preheater under 40 CFR 63.1503 and not a thermal chip dryer. The exhaust from the preheater is vented to the lime-injected baghouse.

After processing at the preheater, the charge is introduced into one of two induction furnaces. Additionally, raw feed material received by the source as clean charge may also be introduced directly (i.e., no preheating) into the induction furnaces. The induction furnaces are classified as group 2 furnaces under 40 CFR 63.1503 because they process only dried clean scrap. Fluxing is not conducted in group 2 furnaces. The electric induction furnace emissions are ducted to the lime injected baghouse.

This source also uses three reverberatory melting furnaces. These three furnaces are classified as group 1 furnaces under 40 CFR 63.1503 due to the use of chlorine gas for reactive fluxing and raw material charging with aluminum scrap that can contain paint, lubricants, coatings, or other foreign materials.. Chlorine injection/fluxing is performed in the side wells to remove magnesium and other

impurities which rise to the top of side well of the furnace and are manually skimmed off as dross. The reactive fluxing takes place only in the side wells of these furnaces and the level of molten aluminum is maintained above the arch way between the sidewells and hearth; therefore, the hearth/combustion chamber and side door are not subject to 40 CFR 63 Subpart RRR emissions limits. Nevertheless, all emissions from the melt/hold furnaces are routed to the lime injected baghouse.

A rotary dross cooler was previously operated at this plant; however, this unit was removed from the source during November 2007. Currently, skimmed molten dross is placed onto pads and cooled in open areas within the production building's alloy department. Because the dross is not agitated during cooling, any fugitive particulate emissions generated by the new cooling process are expected to be negligible given the lack of agitation and the capture/control from the production building. The cooled dross is shipped off-site for recycling.

The molten aluminum from the melt furnaces is transferred to holding furnaces that supply each die cast machine. The aluminum is injected into a die cast from the holding furnace, allowed to solidify, and the cast part is removed for finishing. A solution of water and die lube is sprayed on the open die for cooling and to apply a release agent for easy removal of the die cast part. The die lube consists of 87.2% water, 12.0% petroleum oil, and 0.8% graphite and paraffin wax. The die lube is diluted with water at 50:1 before application. Emissions from the die casting operations consist of organic compounds that are emitted as fugitive emissions.

Without consideration of federally enforceable limits, the potential to emit (as defined in 401 KAR 52:001, Section 1 (56)) of PM_{10} is greater than the major source threshold. The potential to emit of any single hazardous air pollutant (HAP) and the combination of HAPs exceeds the major source thresholds of 10 and 25 tons per year, respectively. The source is also subject to the requirements of 40 CFR 63, Subpart RRR, as determined by the Division at the time of initial TV permitting. As such, the source is subject to the Title V operating permit requirements pursuant to 401 KAR 52:020. Permit V-00-038 was issued to the source on December 19, 2000, with a subsequent revision approved on July 25, 2003. Permit No. V-08-026 is the renewed issuance of the source's Title V operating permit.

EMISSIONS AND OPERATING CAPS DESCRIPTIONS:

There are no emission and/or operating caps in the permit. However, to comply with the secondary aluminum NESHAP, 40 CFR 63, Subpart RRR, the permittee shall comply with the following emission limitations:

Aluminum scrap shredder

PM: 0.010 grain (gr)/dry standard cubic foot (dscf) [40 CFR 63.1505(b)(1)]

Preheater

There are no Supart RRR emissions limitations applicable to the preheater, as this unit is operated at 350 degrees F or lower and is used solely to evaporate water from scrap aluminum prior to charging to the furnaces.

Group 1 furnaces (3 reverberatory furnaces)

PM: 0.40 lb/ton of feed/charge [40 CFR 63.1505(i)(1)]

D/F: 2.1×10^{-4} gr/ton of feed/charge [40 CFR 63.1505(i)(3)]

HCl: 0.40 lb/ton of feed/charge or 10 percent of the uncontrolled emissions, by weight [40 CFR 63.1505(i)(4)]

Group 2 furnaces (2 electric induction furnaces; 21 electric holding furnaces)

There are no Subpart RRR emission limitations applicable to the group 2 furnaces, as these units process only clean charge; and they do not perform fluxing or they perform fluxing using only nonreactive, non-HAP-containing/non-HAP-generating gases of agents.

OPERATIONAL FLEXIBILITY:

The permittee shall use the rotary drum preheater (EP 01) solely to remove water from unpainted/uncoated aluminum chips and maintain an operating temperature that does not exceed 350°F.